ENDOCANNABINOIDS CB1 AND CB2: A POSSIBLE ROLE IN ORAL SQUAMOUS CELL CARCINOMA PATHOGENESIS

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Aim. Cancer of the oral cavity is the eighth most common malignancy in the world. The disease is diagnosed after a considerable delay and predict the individual progression is difficult. The improvements of the therapy did not increased the rate of survival at 5 years, that is still about 50%. The identification of the possible markers that indicates the progression of the tumor is therefore necessary. Endocannabinoids may play an important role in the process of carcinogenesis in the oral mucosa. They are able to bind and activate specific membrane receptors coupled to G proteins, cannabinoid receptors CB1 and CB2. The purpose of this study is to evaluate the expression of CB1 and CB2 receptors in the development of oral cancer through the immunohistochemical study on samples of OSCC.

Materials and methods. We selected 44 cases of patients with the primary tumor in the oral cavity. The stage of the tumor was classified according to the TNM system. The tumors grading was divided into I, II and III grade. The paraffin sections were analyzed by immunohistochemistry. The assessment of the immunoreactivity for CB1 and CB2 receptors was weak or strong. For quantitative analysis the expression of CB1 and CB2 receptors was evaluated in percentage with scale of values ??ranging from 0 to 100%.

Results. The immunohistochemical examination of the samples analyzed showed the absence of expression of CB1 and CB2 receptors in normal mucosa, while peritumoral mucosa showed a weak expression in the vicinity of cancer and tumor mucosa showed an overexpression of receptors. Furthermore, the intensity of staining increased with the increase of the grading. It can be concluded that the strong immunoreactivity of CB1 and CB2 receptors is related to aggressive behavior of oral carcinoma.

Conclusions. The analysis of endocannabinoids and their receptors on tissue biopsies taken from carcinoma of the oral cavity may therefore indicate future therapeutic targets and new prognostic biomarkers in these patients, especially in the early stages of the disease. The ultimate goal of this work is to indicate the possible role of CB1 and CB2 receptors such as tumor biomarker that may help in the early diagnosis of oral cancer and therefore contribute to reduce drastically the mortality of this disease.